



PCT10

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/030,529

DATE: 02/08/2002

TIME: 10:11:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\02082002\J030529.raw

ENTERED

3 <110> APPLICANT: University of North Carolina-Chapel Hill
 4 Elkins, Christopher

6 <120> TITLE OF INVENTION: Isolated Polynucleotides Encoding DsrA, A Protein Conferring
 Serum

7 Resistance To H. ducreyi, And Methods And Compositions Comprising The Same
 9 <130> FILE REFERENCE: 5470-269.WO

C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/030,529

C--> 11 <141> CURRENT FILING DATE: 2002-01-09

11 <160> NUMBER OF SEQ ID NOS: 18

13 <170> SOFTWARE: PatentIn version 3.1

15 <210> SEQ ID NO: 1

16 <211> LENGTH: 1168

17 <212> TYPE: DNA

18 <213> ORGANISM: Haemophilus ducreyi

20 <400> SEQUENCE: 1

```

21 ataaatacgt cattgacatt tttttaatgt aaggtagaat aagaaagtaa attctatatt    60
23 tacaatcaag attgacaatt atttacttaa tgaggtagatt atgaaaatta aatgttttagt    120
25 tgcgtagtg ggattagctt gttctactat tacaacaatg gtcacgcagc cgccaaagtt    180
27 tgctggagta tcttctttgt atagctatga gtatgactat ggtaagggtta aatggacttg    240
29 gtctaatagaa ggcggtttcg atattaaagt gccagggatt aaaatgaagc caaaagaatg    300
31 gatttctaaa caggctactt atcttgaatt acagcattat atgccttata ctctgttct    360
33 cgtgacatat gctcctggcg tttctcctag ccctatactg ttatatccga tgtctgatcc    420
35 tgatcaactt ggaataaate gccagcagct gaaattgaat ttgtatagtt attttaacga    480
37 ttttaagacac gattttaaat taaaagttct tgatgcacgt atttccaaaa ataaacaaaa    540
39 tattgatact ataagtaaat atttactaga actgggtact tatttagatg attcttatcg    600
41 tatgatggaa caaaatacac ataatatcaa taagttgtct aaagaattgc aaactggttt    660
43 agccaaccaaa tcagcattgt ctatgttagt gcaaccaaatt ggtgtaggca aaacgagcgt    720
45 ttctgctgcg gtaggaggtt atagagataa aactgcatta gccattggtg tcggctcacg    780
47 cattactgat cgttttaccg cttaaagcggg tgtagcgttc aatacctaca atggcggcat    840
49 gtcttatggt gcttctgttg gttatgaatt ctaatcatta cgtttaatca ctaatcgttt    900
51 tgggtataat aaaaaggcta aatgtttctc ctcaatttta gcctttctta tttatctttg    960
53 ttatagcttt tgctgttata aaaccgtttt ttagecactt ttattaatta agcttttaag   1020
55 ctatttcaat cagttctact ttcaactttt tcaccatatt atccgccact tctaaaacgg   1080
57 taatattaag ttggtttagc ctaaaattggg taccttctat cggaattttt tctaaatggt   1140
59 ttaaaattaa gcggttaaaag gtgcggac                                     1168

```

62 <210> SEQ ID NO: 2

63 <211> LENGTH: 257

64 <212> TYPE: PRT

65 <213> ORGANISM: Haemophilus ducreyi

67 <400> SEQUENCE: 2

```

69 Met Lys Ile Lys Cys Leu Val Ala Val Val Gly Leu Ala Cys Ser Thr
70 1          5          10          15
71 Ile Thr Thr Met Ala Gln Gln Pro Pro Lys Phe Ala Gly Val Ser Ser
72 20          25          30

```

RAW SEQUENCE LISTING

DATE: 02/08/2002

PATENT APPLICATION: US/10/030,529

TIME: 10:11:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\02082002\J030529.raw

```

77 Leu Tyr Ser Tyr Glu Tyr Asp Tyr Gly Lys Gly Lys Trp Thr Trp Ser
78          35          40          45
81 Asn Glu Gly Gly Phe Asp Ile Lys Val Pro Gly Ile Lys Met Lys Pro
82          50          55          60
85 Lys Glu Trp Ile Ser Lys Gln Ala Thr Tyr Leu Glu Leu Gln His Tyr
86 65          70          75          80
83 Met Pro Tyr Thr Pro Val Leu Val Thr Tyr Ala Pro Gly Val Ser Pro
90          85          90          95
93 Ser Pro Ile Leu Leu Tyr Pro Met Ser Asp Pro Asp Gln Leu Gly Ile
94          100          105          110
97 Asn Arg Gln Gln Leu Lys Leu Asn Leu Tyr Ser Tyr Phe Asn Asp Leu
98          115          120          125
101 Arg His Asp Phe Lys Leu Lys Val Leu Asp Ala Arg Ile Ser Lys Asn
102          130          135          140
105 Lys Gln Asn Ile Asp Thr Ile Ser Lys Tyr Leu Leu Glu Leu Gly Thr
106 145          150          155          160
109 Tyr Leu Asp Asp Ser Tyr Arg Met Met Glu Gln Asn Thr His Asn Ile
110          165          170          175
113 Asn Lys Leu Ser Lys Glu Leu Gln Thr Gly Leu Ala Asn Gln Ser Ala
114          180          185          190
117 Leu Ser Met Leu Val Gln Pro Asn Gly Val Gly Lys Thr Ser Val Ser
118          195          200          205
121 Ala Ala Val Gly Gly Tyr Arg Asp Lys Thr Ala Leu Ala Ile Gly Val
122          210          215          220
125 Gly Ser Arg Ile Thr Asp Arg Phe Thr Ala Lys Ala Gly Val Ala Phe
126 225          230          235          240
129 Asn Thr Tyr Asn Gly Gly Met Ser Tyr Gly Ala Ser Val Gly Tyr Glu
130          245          250          255

```

133 Phe

137 (210) SEQ ID NO: 3

138 (211) LENGTH: 1205

139 (212) TYPE: DNA

140 (213) ORGANISM: Haemophilus ducreyi

142 (400) SEQUENCE: 3

```

143 attttataat ttacaataca ttttatattt ttatatattata taaatacgtc attgacattt      60
145 ttttaaggta gaataagaaa gtaaattcta tatttacaat caagattgac aattattttac      120
147 ttaatgaggt gattatgaaa attaaatggt tagttgccgt agtgggatta gottgtttota      180
149 ctattacaac aatggctcag cagccgcaca agtttgcctg agtatottct ttgtatagct      240
151 atgagtatga ctatggtaag ggtaaatgga cttggtctaa tgaaggcggg ttogatatta      300
153 aagtgcacag gattaaaatg aagccaaaag aatggatttc taaacagggt acttatcttg      360
155 aattacagca ttatatgcct tatactcctg ttctcgtgac atatgctcat gaagttcttc      420
157 ctagctctat actgttatat ccgatgtctg atcctgatca acttggaata aatgggcagc      480
159 agctgaaatt gaatttgtat agttatttta acgatttaag acacgatttt aaattaaaag      540
161 tctttgatgc acgtatttcc aaaaataaac aaaatattga tactataagt aaatattttac      600
163 tagaactggg tacttattta gatgattctt atcgtatgat ggaacaaaaat acacataata      660
165 tcaataaaaa tacacataat atcaataagt tgtctaaaga attgcacaaact ggtttagcca      720
167 accaatcagc attgtctatg ttagtgcaac caaatggtgt aggcacaaacg agcgtttctg      780
169 ctgcggtagg aggttataga gataaaactg cattagccat tgggtgtcggc tcaacgatta      840
171 ctgategctt taccgctaaa gcgggtgtag cgttcaatac ctacaatggc ggcattgttt      900

```

RAW SEQUENCE LISTING

DATE: 02/08/2002

PATENT APPLICATION: US/10/030,529

TIME: 10:11:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\02082002\J030529.raw

```

173 atgggtgcttc tgttggttat gaattctaata cattacgttt aatcactaat cgttttggtt 960
175 ataataaaaaa ggctaaatgt ttctctcac atttagcctt tcttatttat ctttggtata 1020
177 gcttttgctg ttataaaacc gtttttagc cacttttatt aattaagctt ttaagcctat 1080
179 tcaatcagtt ctactttcac ttttttcacc atattatccg ccacttctaa aacggtaata 1140
181 ttaagttggt ttagcctaaa ttgggtacct tctatcggaa ttttttctaa atgttctaaa 1200
183 attaa 1205

```

186 <210> SEQ ID NO: 4

187 <211> LENGTH: 264

188 <212> TYPE: PRT

189 <213> ORGANISM: Haemophilus ducreyi

191 <400> SEQUENCE: 4

```

193 Met Lys Ile Lys Cys Leu Val Ala Val Val Gly Leu Ala Cys Ser Thr
194 1 5 10 15
197 Ile Thr Thr Met Ala Gln Gln Pro Pro Lys Phe Ala Gly Val Ser Ser
198 20 25 30
201 Leu Tyr Ser Tyr Glu Tyr Asp Tyr Gly Lys Gly Lys Trp Thr Trp Ser
202 35 40 45
205 Asn Glu Gly Gly Phe Asp Ile Lys Val Pro Gly Ile Lys Met Lys Pro
206 50 55 60
209 Lys Glu Trp Ile Ser Lys Gln Ala Thr Tyr Leu Glu Leu Gln His Tyr
210 65 70 75 80
213 Met Pro Tyr Thr Pro Val Leu Val Thr Tyr Ala His Asp Val Pro Pro
214 85 90 95
217 Ser Ser Ile Leu Leu Tyr Pro Met Ser Asp Pro Asp Gln Leu Gly Ile
218 100 105 110
221 Asn Arg Gln Gln Leu Lys Leu Asn Leu Tyr Ser Tyr Phe Asn Asp Leu
222 115 120 125
225 Arg His Asp Phe Lys Leu Lys Val Leu Asp Ala Arg Ile Ser Lys Asn
226 130 135 140
229 Lys Gln Asn Ile Asp Thr Ile Ser Lys Tyr Leu Leu Glu Leu Gly Thr
230 145 150 155 160
233 Tyr Leu Asp Asp Ser Tyr Arg Met Met Glu Gln Asn Thr His Asn Ile
234 165 170 175
237 Asn Lys Asn Thr His Asn Ile Asn Lys Leu Ser Lys Glu Leu Gln Thr
238 180 185 190
241 Gly Leu Ala Asn Gln Ser Ala Leu Ser Met Leu Val Gln Pro Asn Gly
242 195 200 205
245 Val Gly Lys Thr Ser Val Ser Ala Ala Val Gly Gly Tyr Arg Asp Lys
246 210 215 220
249 Thr Ala Leu Ala Ile Gly Val Gly Ser Arg Ile Thr Asp Arg Phe Thr
250 225 230 235 240
253 Ala Lys Ala Gly Val Ala Phe Asn Thr Tyr Asn Gly Gly Met Ser Tyr
254 245 250 255
257 Gly Ala Ser Val Gly Tyr Glu Phe
258 260

```

261 <210> SEQ ID NO: 5

262 <211> LENGTH: 952

263 <212> TYPE: DNA

264 <213> ORGANISM: Haemophilus ducreyi

RAW SEQUENCE LISTING

DATE: 02/03/2002

PATENT APPLICATION: US/10/030,529

TIME: 10:11:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\02082002\J030529.raw

266 <400> SEQUENCE: 5

```

267 attttataat ttacaataca ttttatattt ttatattata taaatacgtc attgacattt      60
269 ttttaaggta gaataagaaa gtaaattcta tatttacaat caagattgac aattattttac      120
271 ttaatgaggt gattatgaaa attaaatggt tagttgcgt agtgggatta gottgtttta      180
273 ctattacaac aatggctcag cagccgcaaa agtttgctgg agtatcttct ttgtatagct      240
275 atgagtatga ctatggtaag ggtaaatgga ctgggtotaa tgaaggcggg ttogatatta      300
277 aagtgcacag gattaaaaatg aagccaaaaag aatggatttc taaacagggt aattatcttg      360
279 aattacagca ttatatgoot tataactcctg ttctcgtgac atatgctcat gaogttcctc      420
281 ctagctctat actgttatat ccgatgtctg atcctgatca acttggaata aatcggcagc      480
283 agctgaaatt gaatttgtat agttatttta acgattttaag acacgatttt aaattaaaaag      540
285 ttcttgatgc acgtatttcc aaaaataaac aaaatattga tactataagt aaatattttac      600
287 tagaactggg tacttattta gatgattctt atcgtatgat ggaacaaaaat acacataata      660
289 tcaataaaaa tacacataat atcaataagt tgtctaaaag attgcacaaat gggttaggca      720
291 accaatcagc attgtctatg ttagtgcac caaatgggtg aggcacaaac agcgtttctg      780
293 ctgcggtagg aggttataga gataaaactg cattagccat tgggtgtcggg tcaagcatta      840
295 ctgatocttt taccgctaaa gcgggtgtag cgttcaatac ctacaatggc ggcattgttt      900
297 atgggtcttc tgttggttat gaattctaat cattacgttt aatcactaat cg          952

```

300 <210> SEQ ID NO: 6

301 <211> LENGTH: 264

302 <212> TYPE: PRN

303 <213> ORGANISM: Haemophilus ducreyi

305 <400> SEQUENCE: 6

```

307 Met Lys Ile Lys Cys Leu Val Ala Val Val Gly Leu Ala Cys Ser Thr
308 1 5 10 15
311 Ile Thr Thr Met Ala Gln Gln Pro Pro Lys Phe Ala Gly Val Ser Ser
312 20 25 30
315 Leu Tyr Ser Tyr Glu Tyr Asp Tyr Gly Lys Gly Lys Trp Thr Trp Ser
316 35 40 45
319 Asn Glu Gly Gly Phe Asp Ile Lys Val Pro Gly Ile Lys Met Lys Pro
320 50 55 60
323 Lys Glu Trp Ile Ser Lys Gln Ala Thr Tyr Leu Glu Leu Gln His Tyr
324 65 70 75 80
327 Met Pro Tyr Thr Pro Val Leu Val Thr Tyr Ala His Asp Val Pro Pro
328 85 90 95
331 Ser Ser Ile Leu Leu Tyr Pro Met Ser Asp Pro Asp Gln Leu Gly Ile
332 100 105 110
335 Asn Arg Gln Gln Leu Lys Leu Asn Leu Tyr Ser Tyr Phe Asn Asp Leu
336 115 120 125
339 Arg His Asp Phe Lys Leu Lys Val Leu Asp Ala Arg Ile Ser Lys Asn
340 130 135 140
343 Lys Gln Asn Ile Asp Thr Ile Ser Lys Tyr Leu Leu Glu Leu Gly Thr
344 145 150 155 160
347 Tyr Leu Asp Asp Ser Tyr Arg Met Met Glu Gln Asn Thr His Asn Ile
348 165 170 175
351 Asn Lys Asn Thr His Asn Ile Asn Lys Leu Ser Lys Glu Leu Gln Thr
352 180 185 190
355 Gly Leu Ala Asn Gln Ser Ala Leu Ser Met Leu Val Gln Pro Asn Gly
356 195 200 205
359 Val Gly Lys Thr Ser Val Ser Ala Ala Val Gly Gly Tyr Arg Asp Lys

```

RAW SEQUENCE LISTING

DATE: 02/08/2002

PATENT APPLICATION: US/10/030,529

TIME: 10:11:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\02082002\J030529.raw

```

360      210      215      220
361 Thr Ala Leu Ala Ile Gly Val Gly Ser Arg Ile Thr Asp Arg Phe Thr
364 225      230      235      240
367 Ala Lys Ala Gly Val Ala Phe Asn Thr Tyr Asn Gly Gly Met Ser Tyr
368      245      250      255
371 Gly Ala Ser Val Gly Tyr Glu Phe
372      260
375 >210> SEQ ID NO: 7
376 >211> LENGTH: 899
377 >212> TYPE: DNA
378 >213> ORGANISM: Haemophilus ducreyi
380 >400> SEQUENCE: 7
381 ttttataatt tacaatacat tttatatatt tatattatat aaataacgtca ttgacatttt 60
383 ttttaagttaa ggtagaataa gaaagttaat tctatattta caatcaagat tgacaattat 120
385 ttactttaatg aggtgattat gaaaattaaa tgtttagtgt cgtagtggg attagcttgt 180
387 tctactatta caacaatggc tcagcagcgc ccaaagtgtg ctggagtatc ttctttgtat 240
389 agctatgagt atgactatgg taagggtaaa tggacttggt ctaatgaagg oggtttcgat 300
391 attaaagtgc cagggattaa aatgaagcca aaagaatgga tttctaaaca ggctaattat 360
393 cttgaattac agcattatat gccttatact cctgttctcg tgacatatgc tctggcggtt 420
395 tctctagacc ctatactgtt atatccgatg tctgatcctg atcaacttgg aataaatcgg 480
397 cagcagctga aattgaattt gtatagttat tttaacgatt taagacacga ttttaaatta 540
399 aaagttcttg atgacgtat ttccaaaaat aaacaaaata ttgatactat aagtaaatat 600
401 ttactagaac tgggtactta tttagatgat tcttatcgta tgatggaaca aaatacacat 660
403 aatatcaata agtgtcttaa agaattgcaa actggtttag ccaaccaatc agcattgtct 720
405 atgttagtgc aaccaaatgg tgtaggcaaa acgagcgttt ctgctgcggt aggaggttat 780
407 agagataaaa ctgcattagc cattggtgtc ggctcacgca ttaactgatc ctttaacgct 840
409 aaagcgggtg tagcgttcaa tacctcttat cggaattttt ctataatgtt ctaaaaatta 899
412 >210> SEQ ID NO: 8
413 >211> LENGTH: 142
414 >212> TYPE: PRT
415 >213> ORGANISM: Haemophilus ducreyi
417 >400> SEQUENCE: 8
419 Met Lys Ile Lys Cys Leu Val Ala Val Val Gly Leu Ala Cys Ser Thr
420 1      5      10      15
423 Ile Thr Thr Met Ala Gln Gln Pro Pro Lys Phe Ala Gly Val Ser Ser
424      20      25      30
427 Leu Tyr Ser Tyr Glu Tyr Asp Tyr Gly Lys Gly Lys Trp Thr Trp Ser
428      35      40      45
431 Asn Glu Gly Gly Phe Asp Ile Lys Val Pro Gly Ile Lys Met Lys Pro
432      50      55      60
435 Lys Glu Trp Ile Ser Lys Gln Ala Thr Tyr Leu Glu Leu Gln His Tyr
436 65      70      75      80
439 Met Pro Tyr Thr Pro Val Leu Val Thr Tyr Ala Pro Gly Val Ser Pro
440      85      90      95
443 Ser Pro Ile Leu Leu Tyr Pro Met Ser Asp Pro Asp Gln Leu Gly Ile
444      100      105      110
447 Asn Arg Gln Gln Leu Lys Leu Asn Leu Tyr Ser Tyr Phe Asn Asp Leu
448      115      120      125
451 Arg His Asp Phe Lys Leu Lys Val Leu Asp Ala Arg Ile Ser Lys Asn

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/030,529

DATE: 02/08/2002

TIME: 10:11:17

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\02082002\J030529.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date